METHOD OF HEAT-TREATING SILICON WAFER

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MITSUBISHI MATERIAL SILICON

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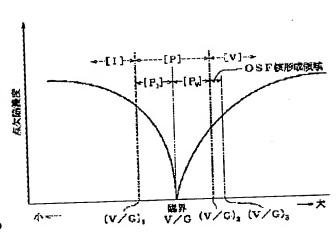
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Abstract of JP2001217251

PROBLEM TO BE SOLVED: To obtain a wafer which exhibits an IG effect. SOLUTION: The region higher than the lowest interstitial silicon concentration capable of forming an interstitial dislocation, which is adjacent to a region [I] where interstitial silicon-type point defects exist dominantly and which belongs to a region [P] where point defect aggregates do not exist, is called [PI]. The region lower than the vacancy concentration capable of forming COP or FPD, which is adjacent to the region [V] where vacant point defects exist dominantly and which belongs to the region [P], is called [PV]. A wafer which is composed of a mixed region of [PV] and [PI], and the hydrogen concentration of which is 0.8× 1018 to 1.4× 1018 atoms/cm3 (former ASTM) is heated from room temperature to 1,150-1,200 deg.C at the rise rate of 10 to 150 deg.C/s under an atmosphere of nitrogen, argon, hydrogen or oxygen, or a mixture of these gases, is retained between 1,150 to 1,200 deg.C for 0 to 30 seconds, is successively retained between 700 and 800 deg.C for 4 to 5 hours under an atmosphere of nitrogen, and is further retained at 1,000 deg.C for 16 hours under and atmosphere of oxygen.



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